



Fertilizer Research and Education Program (FREP)
Technical Advisory Subcommittee (TASC)
California Department of Food and Agriculture (CDFA)
2800 Gateway Oaks Drive, Room 101
Sacramento, CA 95833
(916) 900-5022

March 14, 2019
9:00 AM

MINUTES

TASC Members

Dr. Jerome Pier
Dr. Tom Bottoms
Rex Dufour
Dr. Eric Ellison
Dr. Suduan Gao
Chuck Hornung
DD Levine
David McEuen

CDFA Staff

Dr. Amadou Ba
Dr. Martin Burger
Mark Cady
Brooke Elliott
Natalie Jacuzzi
Nicole Crouch

WELCOME AND INTRODUCTIONS

Dr. Jerome Pier, Chair, called the meeting to order at 9:00 AM and welcomed the subcommittee. David McEuen arrived at 9:23 AM. Dr. Marja Koivunen, Dr. Steven Petrie, and Jenny Rempel were not able to attend the meeting. Self-introductions were made and a quorum was established.

REVIEW AND APPROVE MINUTES

Dr. Pier requested the subcommittee review the minutes of the January 30, 2019, meeting.

MOTION: Dr. Tom Bottoms moved to approve the January 30, 2019, minutes; Chuck Hornung seconded. At 9:04 AM, the motion passed unanimously by present subcommittee members with a vote of 7 – 0.

DEPARTMENT, DIVISION, AND BRANCH UPDATES

Dr. Amadou Ba stated that at the federal level, the 2018 Farm Bill allows hemp as an agricultural commodity. Since hemp is a type of cannabis, and cannabis is not allowed federally, the Fertilizing Materials Inspection Program sought legal advice about regulating fertilizer product labels for hemp. CDFA's Pest Exclusion Branch, which also

regulates plant nurseries, is responsible for the regulation of hemp. Going forward, the term “hemp” is allowed for fertilizer labels, but “cannabis” is not allowed.

Two bills regarding safe and affordable drinking water are moving through the legislature. Senate Bill (SB) 200 would establish the Safe and Affordable Drinking Water Fund. No funding mechanism has been set up yet.

SB 669, authored by Senator Caballero, includes a request for general funds to be spent on drinking water issues for impacted communities. During last year’s failed drinking water legislation, the Association of California Water Agencies opposed a tax on municipal water that would have brought in \$110 million annually. Agricultural organizations agreed to assessments worth \$30 million. The current bill taps general funds, but only in years when there is a budget surplus. CDFA does not have a position on this bill.

CDFA’s Produce Safety Program (PSP) is funded by federal money and regulates food safety compliance under the Food Safety Modernization Act. PSP has a directive to inspect facilities and sent letters 12,000 farms to inform them of the directive.

There are two new CDFA employees. In the Information Technology Office, the Division Director, Mary Winkley, retired. Jenny Chan from the Employee Development Department took the position. In Feed, Fertilizer and Livestock Drugs Regulatory Services (FFLDRS) Branch, Jamie Mack is a new Agricultural Aide.

Funding for FFLDRS is provided in part by the mill assessment on fertilizer sales. A total of three mills are applied to fertilizing materials sold to end users. Fertilizer inspections and registration are funded by two mills and registration fees, and FREP is funded by one mill. At the beginning of the fiscal year, \$4.5 million was available for FREP. As of September 30, 2018, FREP has \$360,000 in expenditures and \$1.76 million for encumbrances. FREP has a total of \$3.15 million in reserve to fund new FREP grants. Depending on project budgets, FREP grants may be issued for more than ten projects.

DISCUSSION AND RECOMMENDATION OF 2019 CONCEPT PROPOSALS

Dr. Pier led discussion in reviewing and voting on the 2019 concept proposals; 43 proposals were received. TASC voted a majority “yes” for the following 16 proposals. The authors will be invited to submit full proposals.

- Promoting the adoption of CropManage to optimize nitrogen and irrigation use through low-cost data loggers and cellular modems for Spanish-speaking growers in Santa Cruz and Monterey Counties
Gerry Spinelli and Michael Cahn
- Immobilization of nitrate in winter-fallow vegetable production beds to reduce nitrate leaching
Richard Smith, Michael Cahn, Joji Muramoto, and Daniel Geisseler

- Developing a nitrogen mineralization model for organically managed vegetable farms on the Central Coast
Joji Muramoto, Richard Smith, Michael Cahn, and Daniel Geisseler
- Yield Prediction for Seasonal N Fertilization Strategies in California's Almond Orchards
Yufang Jin and Patrick Brown
- Achieving Efficient Nitrogen Fertilizer Management in California Wheat
Mark Lundy, Nicholas Clark, Giuliano Galdi, Thomas Getts, Michelle Leinfelder-Miles, Sarah Light, Konrad Mathesius, and Lynn Sosnoski
- Ventura County Nitrogen Management Training Program
Jodi Switzer
- Assessing Nitrogen Fertilizer Needs for Optimal Production and Environmental Sustainability of Summer-Planted Strawberry Production in Ventura County
Andre Biscaro, Daniel Geisseler, and Michael Cahn
- Improving N Management Guidelines for Super-High-Intensive Olive Orchards
Xia Zhu-Barker
- Develop Nutrient Budget and Nutrient Demand Model for Nitrogen Management in Cherry
Patrick Brown and Douglas Amaral
- An innovative fertigation strategy to minimize nitrate losses
Patrick Brown, Douglas Amaral, and Pedro Lima
- Next Generation N Management Training for Certified Crop Advisors
Doug Parker, Dan Munk, Patrick Brown, Allan Fulton, Daniel Geisseler, and Sat Darshan Khalsa
- Evaluating Automatic Fertigation Management and Monitoring Practice Effects on Production and Nitrate Leaching from Processing Tomato Fields to Groundwater
Isaya Kisekka, Thomas Harter, and Daniel Geisseler
- Evaluating NO_x emissions and fertilizer-related emission factors under BMPs to minimize N losses and optimize N use efficiency
Xia Zhu-Barker and William Horwath
- Monitoring nitrogen uptake, partitioning and growth patterns in Raspberry to improve nitrogen management
Jamie Whiteford, Andre Biscaro, and Jose Gomez
- Irrigation and Nitrogen Management, Monitoring, and Assessment to Improve Nut Production While Minimizing Nitrate Leaching to Groundwater
Thomas Harter, Isaya Kisekka, and Patrick Brown

- Assessing Nitrogen Release Dynamics from Organic Fertilizers using a Novel in-situ Field Incubation Method
Cole Smith and William Horwath

TASC voted a majority “no” for the 27 following proposals.

- Response of corn plants to water deficiency and nitrogen fertilizer application in a precision Agricultural System
Mohammad Reza Chaichi and Subodh Bhandari
- Assessing Date Palm Nutrient Status
Peggy Mauk and Robert Krueger
- Quantifying and describing NO_x losses, nitrate movement and distribution in selected soils of California
Davie Kadyampakeni
- Optimization of Nitrogen and Water Applications for Grape Production using UAV-Based Remote Sensing Technology
Subodh Bhandari
- Improving Nitrogen Management of Vegetable Crops with the Best Practical Use of Biostimulants and Biofertilizers
Zheng Wang
- Utilizing cover crops to reduce nitrogen loss in lemon orchards
Charlotte Decock, Ashraf Tubeileh, and Bwala Malama
- Effects of vermicompost amendments on nitrogen dynamics and health of cropped soils
Steve Deverel, Lucas Silva, and Matt Tolbirt
- Mitigating N loss using carbon (activated) within formulated soil amendments
William Petrich, Robert Norman, and David Daley
- Demonstrating and validating the adoption of high-nitrogen pre-plant and liquid organic fertilizers in organic production to reduce phosphorous application by Spanish-speaking growers and ranchers in Santa Cruz and Monterey Counties
Gerry Spinelli and Richard Smith
- Field validation and direct comparison of new irrigation management sensors to improve crop water use efficiency
Paolo Castiglioni
- Micronutrient economical benefit on Almond and Pistachio production
Paolo Castiglioni
- Understanding changes in wetting pattern of subsurface drip irrigation over the years
Majdi Abou Najm

- Crop Need-Based Irrigation and Cover Cropping to Reduce Water Use and Environmental Impacts in Tomato Systems
Emily Woodward, Nicole Tautges, and Kate Scow
- Forage Growth, Nitrogen Dynamics, and Soil Health Effects of Biochar Applied to California Rangeland
David Morell, Charles Hyland, Raymond Baltar
- “Crop Nutrient Minute” Video Series
Parry Klassen
- Central Coast Nitrogen Management Education Program
Parry Klassen
- Use of mineral fertilizer to improve nitrogen use efficiency in forage corn
Nicholas Clark, Anthony Fulford, Daniel Geisseler, Deanne Meyer, David Crohn, Bob Hutmacher, JP Cativiela, Denise Mullinax, and Till Angerman
- Improvement of Irrigation Management Practices
Alma Alvarez
- Application of Dairy Manure and Its Compost for Efficient Nitrogen Management in Corn Production
Ruihong Zhang
- Improving input management in nut orchard systems through the use of winter annual cover crops in the Sacramento Valley.
Sara Tiffany and David Runsten
- Adaptation and demonstration of the iCrop decision support tool for yield prediction and site-specific optimization of irrigation and nitrogen management
Andre Daccache and Isaya Kisekka
- Demonstration of Continuous irrigation for Reducing Nitrogen Losses
Yanbao Ma
- Water management in nursery and greenhouse production to improve use efficiency and reduce runoff. Educational and technical training using workshops and video
Lorence Oki, Darren Haver, Maria de la Fuente, and Dave Fujino
- Testing and demonstrating reliable residual soil nitrate monitoring tools to improve management and reduce nitrogen losses from intensive organic vegetable production
Laura Murphy, Richard Smith, and Jane Sooby
- Nitrogen movement out of root-zones in Central Valley irrigated lands: a multi-scale modeling study
Isaya Kisekka and Thomas Harter

- Evaluation of soil organic matter synergy with soil applied microorganisms in processing tomatoes
Timothy Verrinder
- Improving Micronutrient Density in Tomatoes in the Face of Climate Change Mitigation Measures
Sanjai Parikh, Kate Scow, Nicole Tautges, Peter Green, and Devin Rippner

PUBLIC COMMENTS

No public comments were given.

AGENDA ITEMS FOR FUTURE MEETINGS

The full proposals submitted to FREP will be reviewed at the next meeting. In addition, Dr. Suduan Gao will provide an update on biochar research in a future meeting.

NEXT MEETING

The next meeting will be scheduled via Doodle poll, with choices between late July and early August 2019.

ADJOURN

MOTION: Chuck Hornung moved to adjourn the meeting; Rex Dufour seconded. The motion passed unanimously by present subcommittee members with a vote of 8 – 0.

Dr. Pier adjourned the meeting at 3:19 PM.

Respectfully submitted,

ORIGINAL SIGNED BY MARK CADY

3/26/2019

Mark Cady
Senior Environmental Scientist (Supervisory)
Fertilizer Research and Education Program

Date